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AUTHOR Gottfredson, Gary D.; Gottfredson, Denise C.
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ABSTRACT

This paper provides school district administrators with a structured method for developing school programs aimed at reducing the risk of adolescent dropout. The methodology encompasses problem definition, fact finding, mission management, overcoming inertia, cohering programs tied to theory, feasible goal-setting, and normative personnel re-education. Nine issues influence the planning of program development structure for an entire school system: school system perspective (basic ideology and social beliefs), overall school district mission, personnel inertia (resistance to change), unity of program purposes (coherence), program objectives, program design choices, district norms, quality control, and persistence. (JAM)

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An Approach to Reducing Risk Through School System Interventions

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Gary D. Gottfredson
Center for Social Organization of Schools
Johns Hopkins University

Denise C. Gottfredson
Institute of Criminal Justice and Criminology
University of Maryland, College Park

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For a number of years we have been exploring methods for helping schools and other organizations assess themselves and then plan, implement, and evaluate improvement efforts. This work has led to a method for assessing school climate (G. Gottfredson, 1985), a structure for facilitating school improvement (G. Gottfredson, 1984; G. Gottfredson & D. Gottfredson, 1987; G. Gottfredson, Rickert, Advani, & D. Gottfredson, 1984), and some examples of the application of these tools in successful school improvement programs (D. Gottfredson, 1986, 1987) and experimental programs to reduce the risk of adolescent problem behavior in schools (e.g., D. Gottfredson, 1986, in press; G. Gottfredson, 1987, in press). The organizer of today's symposium asked us to describe the structured method we have evolved for developing school improvement programs aimed at reducing the risk of adolescent problem behaviors (dropout, delinquency, drug use, etc.).

Today, we wish to suggest and illustrate an extension of this school improvement method to school *system* improvement to reduce the risk of dropout. This is a bigger leap than it may at first appear to be. People planning and implementing improvements in a school are workers at the production level (the faculty) and their first-level supervisor (the principal). In contrast, planning and implementing improvements in a school *system* require concerted action by individuals at more levels of the system, concerted action despite specialization of roles and function and barriers to communication, and less direct first-hand knowledge of the conditions of instruction on the part of the planners. Nevertheless there are similarities between the planning structures that are appropriate for building-level groups and those appropriate for school districts.

ISSUES IN SCHOOL SYSTEM DEVELOPMENT

In extending a program development structure to an entire school system, it may be useful to consider what aspects of structure are useful in addressing nine issues: (a) perspective, (b) mission, (c) inertia, (d) coherence, (e) objectives, (f) design choices, (g) norms, (h) quality control, and (i) persistence. School systems are composed of *groups* of people in interaction who work with and through each other to accomplish the educational goals of the organization. These nine issues are issues with which these groups must cope successfully to improve schools in the system and reduce the risk of adolescent problem behavior.

Perspective

I once heard a successful poet explain that it was his job to notice the things that most people took for granted -- the things they did not notice because their attention was directed to the hazards and tasks of day to day life. Most of us -- including most superintendents, educational evaluation and research specialists, pupil personnel directors, curriculum and instruction specialists, and other school system administrators -- are focused on the routine hazards of our jobs. Even when personnel are directing attention to relatively large projects (overhauling curriculum, say, or working to get a new criterion-referenced testing program operating properly), this attention is really mostly attention to details.

One product of a structure useful for educational improvement at the school district level is *perspective*. Achieving perspective requires distancing oneself and other members

of the administrative group from the specific roles assigned to each member and from the specific hazard occupying one's attention at the moment to take stock of how the system is doing. What are the major patterns in the educational outcomes being achieved by the entire system? Are there obvious areas where interesting phenomena that are related to risk are apparent? Would alternative methods of accountability produce a surprising or familiar portrait of the system's productivity?

This distancing and stocktaking may require an occasion for formal assessment of the system's functioning and outcomes; it may require the use of information not routinely scrutinized or the organization of available information in alternative ways. For example, everyone in the district may know that standardized test scores have increased in recent years, but few people in the district may know whether the average age for fifth graders is higher or lower than it was three years ago. Such information may be available but unexamined.

Mission

By mission we mean the long-range, overarching aims of the school system. The clarity, balance, and management of the mission are issues in planning to reduce the risk of adolescent problem behavior. A school system's mission statement presumably holds out to all members of the organization -- from board president and superintendent to custodians -- an indicator of the general direction in which the system should be going and what its outcomes should be. Assuming this mission is clear, an important question in planning to reduce the risk of dropout and school failure is, "Is this mission *balanced* or does it rig the schools against some segments of the student population?"

A balanced mission directs attention to educational outcomes not only for that segment of the student population and that constituency in the community that is easiest to serve but also to those segments of the student population and those community constituencies that are more difficult to serve.

How the mission is *managed* is also important. Are there accountability mechanisms that focus attention on one part of the system's mission but that tend to ignore others? For example, does a grade-level testing program focus attention on test scores in grade but fail to direct attention to the rates of retention in grade? Do accountability mechanisms focus attention on students in the aggregate but fail to focus attention on specific subgroups of students?

Attention to ways the mission is managed in a school *system* is especially important. No instruction takes place in a district office; instruction occurs in schools within classrooms. Educational improvement can occur only at the school. Consequently, it is the activities, planning, problem solving, and implementation of improvements at the school level on which the productivity of any district school improvement program depends. Providing direction and support for beneficial improvements in the school buildings of a district requires mission management.

Inertia

Every organization is anchored in place by a mix of traditions, rules and regulations, normative expectations, role definitions, habits, and conscious and unconscious perceptions of the possible. Together with external constraints--student input and

demands for output, for example--these anchors perpetuate the status quo (Beer, 1980). To make changes, a school system must weigh anchor.

Some specific kinds of events and structures are useful in weighing anchor. These include (a) information, (b) communication events, (c) crises, (d) salient alternative organizational forms or activities, and (e) a method for managing change. It is useful in particular to think of school systems as groups of interacting individuals, and to use methods for group decision and the induction of social change along the lines illustrated by Lewin (1947).

Coherence

Education suffers no shortage of reform ideas. The half-life of these reform notions seems to be somewhere between three and five years. Some ideas seem downright impossible to resist. Who could be opposed to instructional leadership or parents being involved in their children's education?

Problems with program coherence occur when the reform ideas are not the ideas a given school system most needs at the moment. For example, no matter how good an idea reading in the content areas for middle school students may be, if first grade students are not learning to read this is not the idea that will help solve the problem. Or, for example, no matter how enthusiastic the staff may be for the Madeline Hunter model, if a structure and method for coping with student heterogeneity in the classroom is what is needed, this is not the solution to the problem because it includes no specific strategies for coping with heterogeneity.

One reason reform programs often lack coherence, then, is enthusiasm for the fad of the moment. A second reason is that program choices are made without benefit of what we call a *theory of action.*

A theory of action explains a problem or the path to its resolution in terms of variables over which the school system or its personnel have control. In contrast, whenever you hear educators explain a problem by reference to variables over which they have little control (e.g., "parents don't 'value' education") you are hearing a theory of *inaction.*<1> A group operating on the basis of a theory of action is more likely to develop a coherent program directed at solving the system's educational problems. A group operating with a theory of inaction may do something, but what it does may bear little on the problem.

Objectives

According to a recent report in the Baltimore *Evening Sun* (Kelly, 1988), the city school system's grade retention rate in the first grade is about 19%. It is equally high in grade 7 and higher in grades 9 (31%) and 10 (23%). With such high retention rates it is likely that only around half of students make it to the legal age for leaving school without having been retained in grade at least once and the dropout rate is probably

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<1>This theory of inaction is not only likely to be unproductive of action, but it is also nearly always false. There may be a few parents somewhere who do not value education for their children, but they are clearly deviant individuals. Perhaps what this complaint really means is, "parents do not do what I want them to do to help me educate their children." This rephrasing is a more useful theory, because it suggests that the person uttering the sentence might me more effective in communicating what he/she wants, among other things.

around 50%.<2>

Suppose that Baltimore City Public Schools adopted an objective of raising the school completion rate from its current level to 80% within four years while maintaining current graduation requirements (that is, not lowering graduation standards dramatically). This would be a hopelessly difficult objective for the system. Because so many persons entering high school currently have been retained at least once--therefore displaying the single most potent predictor of dropout--no foreseeable short-term program could cut the dropout rate by the amount required to attain the 80% graduation objective. Were the system to plan a program with this objective, the predictable consequence would be a lack of personnel commitment to the objective and probably an added sense of demoralization.

Karl Weick (1984) has explained how large social problems (such as Baltimore's dropout problem) can usefully be redefined as a collection of smaller problems many of which can feasibly be addressed in the short run, allowing problem solvers to experience a succession of "small wins." For the same reason, some structures for helping groups make plans schedule critical benchmarks (Gottfredson, 1984) that signal progress in problem solving long before the cumulative effects of programs become visible. These critical benchmarks and small wins serve as worker and organizational reinforcers. Critical

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<2>As far as we know, these statistics have not been reported for Baltimore. The number of students enrolled in grade 12 in 1986-87 relative to the number of students enrolled in grade 1 that year (Kelly, 1988) was .48. If the city's population were stable over the years and all 12th graders graduated, the dropout rate by this estimate would be 52%. The city's population has actually been declining substantially, so 52% may underestimate the actual dropout rate. The school system presents annual dropout estimates (incidence data) that understate the prevalence of dropout.

benchmarks, short-term objectives, and implementation or performance standards all serve reinforcing functions. They should be built into any school system plans to reduce the risk of adolescent problem behavior.

Objectives must be attainable and perceived to be attainable by the application of feasible amounts of effort.

Norms

Every school system has developed a set of verbalized and tacit norms that structure the way it does business. These norms have a stabilizing influence, they are some of the "anchors" that maintain the status quo. Developing or changing shared definitions in entire school systems is more difficult than changing norms in single schools. Departmentalization and the tall organizational structures typical of moderate to large sized school systems make communication problematic and the management of change difficult.

Among other things, norms and role definitions determine who communicates with whom, who is regarded as "responsible" for planning in specific areas of the system's concern, and who is "not responsible" for planning in various areas. Making improvements in school systems to help them better serve students at risk of dropout and other adolescent problem behaviors will usually require specific mechanisms for enhancing communication and for managing change so that normative re-education (French & Bell, 1978) can occur.

Quality control

The same features that make communication an issue in school system planning and improvement--tall organizational structure, specialization of function, and norms regarding communication--make quality control an issue as well. Quality control is especially problematic if the school system has norms antithetical to the upward communication of bad news.

It appears typical of school systems that they tend to quality control some traditional and easy-to-assess *outcomes* while attending relatively little to the management of the specific interventions or reforms that are intended to solve problems. For example, systems regularly track standardized achievement test scores but often have no mechanism at all to track the match between the content of tutoring in a pull-out program and the reading instruction that occurred in the student's classroom that day, for example. To conduct quality control at the level of classroom implementation, building-level personnel must be involved. District-level personnel cannot quality control classroom activities.

One common result of the difficulty of quality controlling many aspects of programs from the system level is the phenomenon of school systems quality controlling their image rather than their programs.

Persistence

Most reforms in education do not work as intended. Most reforms do not produce the expected outcomes. Most reforms do not occur in the intended way. Most reforms are eventually abandoned in favor of a different reform. Most reforms that replace old reforms do not work as intended.

Persistence is required because the difficulty in getting innovations to be effective is predictable. It is predictable that groups involved in innovation will experience turnover in membership long before the bugs have been worked out of the reform. This can lead to the abandonment of much needed reforms long before they have had a chance to be refined to the point where they work to achieve the desired outcomes. Structures are needed to foster tinkering with innovations through an iterative process until successful implementation occurs.

PROGRAM DEVELOPMENT STRUCTURE AND SYSTEM CHANGE

Let us illustrate how a specific structure for planning, implementing, and evaluating school improvements is being applied by one school system to cope with the foregoing issues as it seeks to reduce grade retention and dropout throughout the county-wide school system. We are assisting this district develop ambitious plans to cope with these problems by applying the Program Development Evaluation (PDE) method (G. Gottfredson, 1984; G. Gottfredson et al., 1984). This structure calls for composing a planning group of responsible parties and for this group to work through a sequence of steps intended to stimulate rationale planning and program development.

Specifically, the method calls for:

1. The use of information in defining problems and in translating these problems into concrete, measurable goals.

2. Specifying a theory of action to direct choices among potential interventions and indicate the manipulable causal variables that will have to be addressed by the program.

3. Selecting proven (or at least plausible) interventions to bring about the outcomes the theory of action implies must occur.

4. Group decision making that uses information about the force-field as perceived by those who must implement the decisions.

5. The specification of critical benchmarks, implementation standards, and time-delineated tasks to serve as indicators of progress early in the developmental life of the program.

6. Monitoring all aspects of program implementation and outcomes to signal needed revisions in course.

7. The expectation that program development occurs over time, that emergent problems will require resolution, and that program refinement rather than abandonment is necessary for organizational effectiveness.

Perspective and Problem Definition

The structure calls for the application of information to define needs for educational improvement and in the contemplation of all aspects of program development. A first step for this school system, therefore, was to conduct a comprehensive re-appraisal of evidence about its current levels of effectiveness. Problems of grade retention were clearly visible in the system, but the prevailing opinion was that the system must be on the right track because test scores had been increasing in recent years.

Outside researchers helped the system achieve perspective by (a) conducting independent analyses of the test score and demographic data which showed that the increase in test scores was in part due to a change in the population taking the tests (G. Gottfredson, 1988), (b) gathering interview data from a cross-section of schools to assess normative expectations, communications, current methods for coping with the at-risk population, and goals within the district, and (c) presenting the results of these fact-finding exercises in a retreat for system administrators.

It turned out most attention had been focused on the improving test scores, with little realization that the population tested was shifting markedly due to high and increasing levels of grade failure in the district. The dropout rate estimated for the district, which had not been calculated as a prevalence datum, was about 40%. This was a surprising figure. Analyzing district data from an altered perspective showed, for example, that the percentage of students enrolled in the grades appropriate for their ages fell from 96% in kindergarten to 46% by grade 9. An altered perspective on available district data also showed that only 40% of students whose age implied that

they would be in eighth grade (were they making expected educational progress) met a criterion score on the 8th grade criterion-referenced test.

Fact-Finding, Mission Balance, and Mission Management

Additional fact-finding focused on the ways the system's general aims were understood and managed, and on how balanced this understanding was. Interviews were conducted with area superintendents, principals, assistant principals, counselors, and teachers in a cross-section of schools. In response to questions about goals, most individuals at all levels identified raising test scores on the norm-referenced and criterion-referenced tests composing the district's state-imposed testing program as a key goal. Some personnel pointed to "overage students" in middle schools and dropout in the high schools as problems, but not as priorities for problem solving.

Interviews turned up no evidence of any systematic methods for coping with student heterogeneity beyond Chapter I resource and in-class programs and special education programs. That is, no programmatic attempt to assist classroom teachers manage the instruction of heterogeneous classes was evident. Interviews, and a review of records, showed that rates of suspension (in and out of school) and expulsion were extremely high in many middle schools. High rates of grade retention in first grade were generally regarded as expected. Certified special education teachers, and teachers to work in schools in the poorer rural areas and in central city (predominantly black) schools were in short supply. Some noncertificated personnel were being used, and there was a general perception that less experienced and talented personnel were staffing schools in less "desirable" locations.

Interview evidence also showed problems with the methods being used throughout the district to test for mastery of district objectives. Problems with mastery testing probably also contributed to grade retention, and the origin of the testing methods being used was in the district's emphasis on maintaining standards.

Combined with the data about test scores and grade retention, this additional information served to focus the school system planning team's attention on a redefinition of goals and assessment procedures that reflect a greater balance. Specifically, the team framed long-term goals for increasing the percentage of students who meet grade-to-grade promotion standards *at the expected age* as well as goals for the percentage of ninth graders who graduate from high school. The planning group was constrained by the expectation that the school board would look with disfavor on any proposal that hinted of relaxing performance standards in any way, and the new overall goal coped with the board's emphasis on standards by setting a more balanced as well as more difficult standard by emphasizing both the promotion criteria and the timeliness with which they are met.

Overcoming Inertia

Both the situation the school system faced and the program development structure we applied probably contributed to progress for this school system. Grade retention had developed into a sufficient problem for the middle schools that there was in some sense a "crisis" and the system had been negatively reviewed by the state department of education partly on this basis. The application of the PDE method by a group specially composed for planning and facilitated by outsiders also helped to stimulate

communication, caused new information to be considered, explicitly fostered the examination of alternative courses of action, and provided a method for managing change. Force-field analysis was used as one method to overcome inertia.

Program Coherence and Program Theory

In simplest terms, the rationale for the educational improvements laid out in the system's plan is that improved instruction focused more directly on ensuring that low performers learn and better application of available resources will lead to enhanced academic performance, leading to higher rates of on-time attainment of promotion standards, leading to less retention in grade, leading (because the best predictor of dropout is grade retention; Bachman, Green, & Wirtanen, 1971) to higher rates of on-time completion of the school system's standards for high school graduation.

The system's plan recognizes, however, that the causal process leading to dropout on the one hand and on-time graduation on the other are somewhat more complex than this simplified rationale implies. In more complete detail, the plan assumes that teacher quality, methods of and arrangements for instruction, adult supervision in the schools and in the home, and student attitudes and conduct all contribute to or detract from academic performance. The plan recognizes that these factors are only partly within the purview of the schools and only partly amenable to school action to bring about improvements. Where appropriate and feasible, however, the school can influence each of these elements of the causal process. Teacher assignments, teaching methods and arrangements, and supervision and discipline by school personnel are all factors that can be manipulated to advantage by the school system. Parental supervision and assistance

in achieving educational objectives is only partly amenable to school intervention. But it is legitimate for schools to request specific kinds of assistance from parents in these areas-monitoring the completion of homework assignments and encouraging businesslike conduct in school, for example.

Improved academic performance and school discipline, concomitant decreases in grade retention, combined with greater assistance from the home in meeting academic and conduct standards in the school, will (according to the system's theory of action) lead to less student problem behavior, greater attachment to the school, more commitment to educational pursuits, and higher levels of belief in the validity of conventional rules. These outcomes will all contribute to sustained educational progress. These outcomes should also reduce the mismatch between school structures and arrangements and the life predicaments that thwart school participation for some adolescents (although some life predicaments are beyond the school's purview). This theory, developed by group consensus through discussion and consideration of the evidence about persistence in education, led to the specification of objectives congruent with the theory and the consideration of improvements congruent with the objectives specified.<3>

<3>In abbreviated form, these objectives are:

1. Increasing students meeting grade-to-grade promotion criteria at the expected age by specified amounts each year.
2. Reducing counterproductive student behavior, including drug and alcohol use, delinquent behavior, pregnancy, nonattendance, and misconduct in school.
3. Increasing commitment to educational goals, attachment to school, and belief in conventional social rules.
4. Improved experience and performance of teachers providing instruction in high-risk

One important structure for promoting program coherence was an agreed-upon rule that only innovations that evidence implied would promote the outcomes the theory of action implied must occur would be considered in planning. The application of this rule led to the specification of 17 specific interventions to be initiated in the next two years (with additional interventions to be phased in over time). The specific nature of these interventions is beyond the scope of this paper, but it is worthy of note that they are a highly credible and impressive set of reforms targeted directly at the problems the district must solve. They include the application of more structured kindergarten, improved reading and math instruction in the early elementary grades, an ambitious agenda of teacher and administrator training, cooperative learning and improvements in discipline in the middle schools, and other improvements.

Setting Feasible Goals and Objectives

In 1987 in this school district, the number of persons enrolled in 12th grade was about 55% of the number of persons enrolled in 5th grade in 1980, so the current on-time graduation rate for this school district is about 55%. The speed with which this percentage can be raised to 80% is limited by the demography of the current high school population and the unfortunate fact that many high-school aged students have already discontinued their educations. The planning team decided to use graduation records to calculate the on-time graduation rate for each year as precisely as possible (using the

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schools (i.e., rural schools and schools with a high proportion of students receiving subsidized lunch) and providing instruction to high-risk students in all schools (i.e., students eligible for Chapter I services and students who have failed to meet promotion standards at any point in their educational careers.

number of district students of fifth-grade age seven years earlier as the denominator), making corrections for in- and out-migration if necessary, to assess progress towards the goal of 80% graduation by the year 2001. The year 2001 is the year students entering kindergarten in 1988 would be expected to graduate. To achieve a goal of 80% graduation by the year 2001, the percentage improvement will have to exceed 2% each year on average. Because bigger improvements due to the cumulative effectiveness of improving educational progress in the earlier grades will not be manifested in high school completions for several years, improvements smaller than 2% are expected in 1989 and 1990, with larger improvements manifested in later years.

Similar logic was applied in the specification of feasible goals and objectives in other areas.

Normative Re-Education

The school system's plan for educational improvement and dropout reduction calls for applying the PDE method in an iterative fashion over the years. This means, repeated monitoring of key aspects of implementation and outcomes, redesigning strategies when they are ineffective, and being vigilant for information about obstacles to progress. The application of the method itself is intended to be a tool for normative re-education in the school system. The system has only begun this process.

Quality Control and Persistence

The planning team is now working with those parts of the PDE method that call for specifying implementation standards for their reforms. Because of the system-wide nature of the reforms being developed, quality control procedures that can be applied at the building level and monitored at the system level are required. Educators in pilot schools will work with district personnel to devise quality control systems that are effective in the building with district personnel then having responsibility for disseminating these procedures in other schools and monitoring the monitoring of these implementation standards.

FINAL WORDS

We have provided a partial description of an application of a systematic approach for program planning to one school system's current ambitious efforts to reduce the risk of dropout and adolescent problem behavior. In the process of assisting this school system develop its plans, we were struck with the similarity of the group-psychological processes involved in planning at the district and at the school building level. We were also struck by the magnitude of the benefits of perspective and rational problem solving at this higher level of complexity. For example, discovering better ways of expending Chapter I monies can easily result in tens of millions of dollars being spent more productively in a district. We are encouraged that the PDE structure appears to hold promise of being useful in reforming school systems to help them better serve at-risk students.

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